



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,021	07/24/2003	Darin D. Lindig	10002404-3	9974

7590 04/18/2005  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER
----------

LARKIN, DANIEL SEAN

ART UNIT	PAPER NUMBER
----------	--------------

2856

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

★ ✓  
ex

<b>Office Action Summary</b>	Application No. 10/626,021	Applicant(s) LINDIG, DARIN D.	
	Examiner Daniel S. Larkin	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>24 July 2003</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference numeral -- 14b --, as shown in Figure 4, does not appear within the written disclosure.

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities:

Page 1, line 6: The phrase -- , now U.S. Patent No. 6,629,452, -- should be inserted after the date "2000".

Page 1, line 7: The date "07/25/200" should be corrected to read -- July 25, 2000 -- in order to maintain consistency with the date provided in line 6.

Page 2, line 6: Should the term "electrostatographic" be corrected to read -- electrostatographic --? Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,934,140 (Jackson et al.) in view of JP 63-62752 (Watanabe et al.). With respect to the limitations of claims 1 and 6, the reference to Jackson et al. discloses a paper property sensing system comprising a reproductive device/printer (9); a surface engaging member/sensor arm (112) configured to physically engage a paper sheet surface (116), the sensor arm (112) comprising a flexure material body, as shown in the figures, that is supported in a

Art Unit: 2856

cantilevered disposition proximate a piece of paper (116) to be printed upon by the paper; a light source/LED (120); and a position detector (122) positioned to detect light from LED (120) deflected by the sensor arm (112). The reference fails to explicitly recite a reflective member joined with the surface engaging member; however, the Examiner argues that the sensor arm (112) has some reflective means in order to allow light from the LED to contact the position detector (122) via the sensor arm (112). The reference to Jackson et al. fails to disclose a detection mechanism that measures roughness of a paper surface. The reference to Watanabe et al. discloses a thermal transfer printer having the ability to obtain a high grade printing capability by measuring the roughness/smoothness of the surface (1a) of paper (1) being transferred. The smoothness detector is comprised of a cantilevered probe attached to a base at one end and having a stylus tip (10) mounted at the free end of the cantilever to engage the paper surface (1a). Deflection of the stylus (10) due to the unevenness of the paper surface (1a) is detected by a pickup (11) and used in a correction circuit (15) for purposes of determining ink characteristics as it relates to the surface characteristics of the paper (1). Modifying the flat end of the sensor arm utilized in Jackson et al. with a probe tip as shown in Watanabe et al. would have been obvious to one of ordinary skill in the art as a means to more accurately detect the surface texture of the print media as a means of ensuring high grade printing.

With respect to the limitation of claims 2 and 7, the reference to Jackson et al. discloses the use of a controller (38) that controls and coordinates the

Art Unit: 2856

operations of the reproductive machine (9). The reference further states that the various measurements gathered may allow one to enable control of proper paper paths and process parameters, like fuser temperature (col. 8, lines 51-54).

With respect to the limitations of claim 3, the Examiner argues that in light of the fact that Jackson et al. disclose a controller (38) that enables one to control process parameters; and the detection of the paper surface is monitored through light reflecting from the cantilever (112) to a position detector (122), the reference has the teaching to convert a position measurement into a process control signal in combination with the teachings of Watanabe et al. which measures surface roughness of a paper product.

With respect to the limitation of claim 4, the reference to Jackson et al. discloses that the flexure body (112) may be metal as used in the embodiments of Figures 2A and 2B. The Examiner argues that providing a metal cantilever is well known in the art as means of providing a rugged yet sensitive surface engaging device.

With respect to the limitation of claim 5, the reference to Jackson et al. discloses a flexure body (112) having first and second ends. The reference fails to explicitly disclose if the flexure body tapers between the two ends. The Examiner argues that tapering a cantilever is a choice of design which is well known to those of ordinary skill in the metrology art, and one would be motivated to taper the cantilever as a means of providing a very thin and sensitive tip to contact the paper surface while providing a larger support side of the cantilever.

Art Unit: 2856

With respect to the limitations of claim 8, the reference to Jackson et al. discloses a paper property sensing system comprising a reproductive device/printer (9); a paper property sensor system (100); and a control system (38) coupled to the paper property sensor system (100) for modulating one or more print parameters, like fuser temperature (col. 8, lines 51-54). The reference to Jackson et al. fails to disclose a detection mechanism that measures roughness of a paper surface.

The reference to Watanabe et al. discloses a thermal transfer printer having the ability to obtain a high grade printing capability by measuring the roughness/smoothness of the surface (1a) of paper (1) being transferred. The smoothness detector is comprised of a cantilevered probe attached to a base at one end and having a stylus tip (10) mounted at the free end of the cantilever to engage the paper surface (1a). Deflection of the stylus (10) due to the unevenness of the paper surface (1a) is detected by a pickup (11) and used in a correction circuit (15) for purposes of determining ink characteristics as it relates to the surface characteristics of the paper (1). Modifying the flat end of the sensor arm utilized in Jackson et al. with a probe tip as shown in Watanabe et al. would have been obvious to one of ordinary skill in the art as a means to more accurately detect the surface texture of the print media as a means of ensuring high grade printing.

Art Unit: 2856


***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin  
AU 2856  
13 April 2005

  
**DANIEL S. LARKIN**  
**PRIMARY EXAMINER**